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Using low income and material deprivation to monitor poverty reduction

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A household in Canada is poor if it cannot afford a very modest but still acceptable standard of living, compared to the average standard of living in Canada. In an extremely poor country, poverty might mean that your children have no shoes or that you have only one inadequate meal a day. In Canada, poverty means you cannot afford such things as fresh fruits and vegetables every day; or a warm winter coat; or being able to give your child an inexpensive birthday gift; or the other goods and services that are considered minimally necessary for an acceptable standard of living in our wealthy country.

Almost all poverty measures commonly used in Canada work by setting a dollar amount – a poverty line – below which a household is said to be in poverty, above which a household is not considered poor. But when we measure poverty only according to income, we may incorrectly assess whether or not many Canadians are actually experiencing a 'poverty level' standard of living.

Here's why.

Some households with incomes above an income-defined poverty line may have many debts, special needs or face especially high living costs – or hundreds of other factors that can arise in real life. On the other hand, some households below the poverty line may have usable assets, may get help from other family members or otherwise have access to alternative resources. Some may own a home or have access to inexpensive living accommodation, while others may be searching for an affordable place to live.

A more technical problem is that 'annual income' is usually used to assess whether or not a household is above or below a poverty line. But if a household has no income from, say, October through March, but annual income is defined as what a household gets over one calendar year from January through December, the household might be recorded as 'not poor' yet have been suffering serious deprivation for part of the year until the first pay cheque comes in.

Crucially, using income lines as poverty measures also does not take into account the availability or the quality of public services such as medicare, education or, in some provinces, inexpensive child care or early childhood education. This factor is especially important for policy-makers since many of the measures taken to reduce poverty and inequality involve enhanced public services rather than just money – for example, Ontario's new universal early childhood education or Quebec's inexpensive child care.

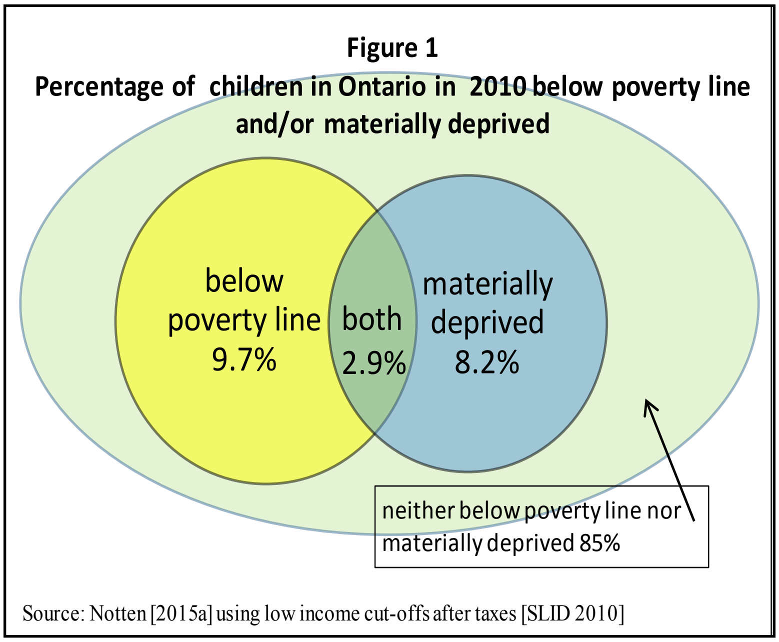
So if we use only poverty lines defined as an amount of income, we may be measuring the extent of poverty and the effects of poverty reduction policies with an imperfect yardstick. We could be misdiagnosing the scope of poverty – the number of Canadians who are poor, who they are and the depth of their poverty.

An answer that is used in Europe is to complement the income yardstick with another way of measuring poverty: material deprivation. Such an indicator focuses on the *outcome* of not having enough financial resources, namely being unable to afford typical necessities. While income indirectly measures standard of living by assessing inputs, material deprivation attempts instead to assess directly the household's standard of living by looking at what it actually has. Material deprivation data is usually obtained by surveying households as to whether they would want but cannot afford certain goods or services (usually a list of about 10 to 15 goods or services) that would commonly be present in households with an acceptable but modest standard of living [Matern, Mendelson and Oliphant 2009a].

But is this really a significant problem? Is the potential disconnect between a poverty level standard of living and a poverty line a matter of just a few households, or might it meaningfully distort our assessment of poverty? Would a material deprivation index provide a useful accompaniment to commonly-used poverty lines to understand the real situation of Canadian households?

COMBINING POVERTY LINES AND MATERIAL DEPRIVATION INDICATORS

Notten's [2015a] research on child poverty in Ontario confirms what many other researchers have found for other parts of the world: the variance between poverty line and material deprivation indicators is indeed large. As seen on Figure 1, among children in Ontario in 2010, 9.7 percent were in households below an income-defined poverty line (in this case, after tax low income cut-offs, but any of the other poverty lines would have almost identical results) and 8.2 percent were in materially deprived households as defined by their family's inability to afford two or more necessities, such as healthy foods or needed dental care. These are roughly similar amounts; however, only 2.9 percent of children were living in households that were *both* below common poverty lines and also experienced material deprivation.



The lack of overlap between income-defined poverty and poverty defined by material deprivation is substantial: 70 percent of children identified as poor according to a poverty line are not poor according to a material deprivation index. On the other side of the coin, 65 percent of children identified as poor according to a material deprivation index are not poor according to a poverty line. A similar pattern arises irrespective of which of the three common low-income indicators (the Market Basket Measure, the Low Income Measure and the low income cut-offs) in Canada is used and irrespective of the survey instrument or year.

Assessments based solely on poverty lines or solely on material deprivation thus have two consequences. They may *exclude* a large chunk of people whom we would consider poor if we were better able to assess their circumstances. They may also *include* people whom we might not consider poor if we were better able to assess their circumstances.

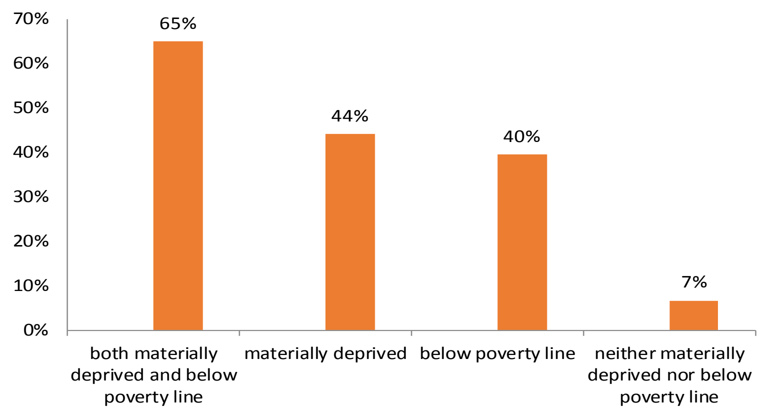
In the language of epidemiology, these are known as false negatives – those who are deemed not poor but really are – and false positives – those who are deemed poor but really are not. The test of the accuracy of a method to diagnose a condition (in this case poverty) is the extent to which it minimizes both the false positives and false negatives.

Unfortunately, the diagnostic problem does not just lead to a miscount of people: It also biases policy evaluation. Notten [2015a; 2015b] shows that when the assessment relies on a single poverty indicator, income transfer programs can be assessed as less effective and less efficient in reducing poverty than if two complementary poverty indicators were used. Government's efforts to reduce poverty may sometimes be more successful than initially thought.

The advantage of using two complementary poverty indicators is that it reduces the uncertainty around identifying the poor by distinguishing between a group that is very likely to be experiencing poverty (poor according to both indicators), one that may possibly be experiencing poverty (poor according to only one indicator) and one that is almost certainly not poor (not poor according to either indicator).

Making these distinctions improves the evaluation of programs because issues in poverty measurement are less likely to confound the evaluation of the program's performance. It reduces the risk of a program getting 'blamed' for measurement issues in the poverty indicator. However, it is not a perfect solution as the use of two indicators minimizes the chances of 'false positives' when both indicators are present, but does not minimize false negatives. The need remains for more information to assess the situation of those about whom the poverty metrics disagree.

Figure 2
Percentage of Ontario children in households with one, two or no poverty indicators on social assistance



Source: Notten [2015a] using low income cut-offs before taxes [SLID 2010]

Take, for example, social assistance in Ontario. The Ontario Works and Ontario Disability Support Program provide last-resort income support to households with no or minimal financial resources and no alternative means to generate income.

Consistent with the aim of these programs, Notten's research found that many poor Ontarian children receive support from these programs [Notten 2015a]. Figure 2 shows that fully 65 percent of children living in households that are both materially deprived and below the poverty line are recipients of social assistance. Given that these two poverty indicators make different measurement mistakes, a unanimous verdict means that it is highly likely that a household's living standard has been correctly measured, and that Ontario's social assistance program is reaching about two-thirds of those children in households that are almost certainly in need.

On the right hand bar in Figure 2, we can see that about 7 percent of children in households with neither indicator are in receipt of social assistance in Ontario. Children in households with both indicators are therefore about 9 to 10 times as likely to be in receipt of assistance – a highly significant difference in likelihood between those with neither indicator and those with both indicators. Because social assistance is an extremely detailed, individualized assessment of material circumstances, it is all but certain that any household on assistance is experiencing a poverty level standard of living.

We see that children in households with one or the other indicator, but not necessarily both, have between 40 and 44 percent likelihood of receiving assistance – about four to five times the likelihood of those with neither indicator. While most of those children are in households for which only one indicator is present, some are in households which 'overlap' and both indicators are present. We need more information to determine if the 'missing' 56 to 60 percent in this group are a problem of the social assistance program not reaching many of the poor or a problem of the definition of poverty.

Using low income and material deprivation indicators together provides another useful way to assess the targeting and effectiveness of anti-poverty programs, but it does not solve all poverty measurement issues. If, for instance, we limit our definition of poverty to comprise only persons on which both measures agree, there are going to be far fewer false positives (households incorrectly assessed as poor) but there will be many more false negatives (households incorrectly assessed as not poor). Such a perspective would be problematic. While it implies that we can be reasonably confident that social assistance in Ontario is reaching a majority of children in households that are in extremely dire circumstances, it also means that it is likely not reaching quite a few of those who are in difficult yet not quite so dire straits.

INSPIRATION FROM EUROPE'S USES OF MATERIAL DEPRIVATION INDICATORS

Material deprivation indicators were first developed in Europe as a complement to income poverty statistics. Europe uses both indicators to monitor progress on poverty reduction, to set performance targets and to promote learning between jurisdictions. Material deprivation indicators could play a similar role in Canada, at both federal and provincial levels.

With the help of national statistics agencies, the European Union's statistics office, Eurostat, annually publishes various material deprivation indices. The indices are the same for the all European Union member states, so that they can be used for comparisons among the members. Some member states, such as Ireland, further collect information on nationally specific material deprivation indicators (Survey on Income and Living Conditions 2010). Statistics Canada could develop and collect national, provincial/territorial and regional material deprivation data to complement the low-income indicators that are currently used as poverty indicators throughout Canada.

The Irish case illustrates the complementarity of both low-income and material deprivation indicators. From the mid-1990s to the mid-2000s, the Irish economy experienced a prolonged period of rapid growth resulting in large increases in the average living standard. Yet income poverty grew substantially. This was because the poverty threshold, like Canada's low-income measure, was defined relative to median income, and these incomes grew more than those in the bottom of the distribution [Notten and de Neubourg 2011]. However, material deprivation indicators were able to capture the dramatic improvements in living conditions for those at the bottom of the distribution and provide a more realistic understanding of what was going on.

As in Canada, much of European social policy is in the hands of national or sub-national governments. European national governments nonetheless exchange information on well-being and policy as part of the open method of coordination. Every two years, member states prepare an action plan on social inclusion in which they highlight their policy priorities and their progress using both common and country-specific indicators. Because data are comparable, jurisdictions can learn from one another.

Like the Trudeau government, the European Union aspires to monitor the results of policy. Material deprivation indicators are used to monitor the European Union's poverty reduction and social inclusion goals as part of Europe's 2020 strategy. In 2010, European Union's Heads of State and Government committed to lifting at least 20 million people out of poverty and social exclusion – i.e., from around 116.5 million down to 96.5 million (2008 European Union Statistics on Income and Living Conditions figures). The European Union social inclusion target combines three indicators: income poverty (also referred to as 'poverty risk' or 'relative poverty'), severe material deprivation and joblessness or near-joblessness.

DEVELOPING A CANADIAN MATERIAL DEPRIVATION INDEX

Neither poverty lines nor material deprivation indices are perfect.

In addition to the reasons discussed above, poverty-line indicators suffer from underreporting of income (especially cash payments in the informal economy not captured in tax data). Material deprivation surveys can inquire only about a limited number of goods or services, so the survey results may be highly sensitive to the methodology for selecting which items to ask about [Guio et al. 2016]. Material deprivation indicators may miss adverse material outcomes suffered by minority groups because the lists of 'normal' necessities may not include goods or services that are essential to some cultures but not to the majority of Canadians. Material deprivation surveys may also face underreporting challenges because respondents may not want to admit they cannot afford necessities.

Given these imperfections, using both poverty lines and material deprivation indicators as complementary indicators can provide more accurate information, because the mistakes of one indicator are not likely to be the same as those of the other. Each poverty indicator measures a distinct aspect of poverty. Poverty lines count financial resources. Material deprivation counts items that a household says it does not have because it cannot afford them (usually determined through a survey).

The Trudeau government has brought poverty reduction and social policy back on the federal agenda [Battle, Torjman and Mendelson 2016]. The Liberals promise reforms in signature federal programs such as the Canada Child Benefit, Employment Insurance and Old Age Security/Guaranteed Income Supplement. They have committed to developing a federal Poverty Reduction Strategy. Recently, the federal government and the provinces have agreed to an expansion of the Canada Pension Plan. And Ottawa says that it is committed to monitoring the results of its policies.

The federal government should, of course, continue to look at poverty through the lens of income-defined poverty lines. But if it is serious about using good evidence to assess policy, Ottawa should also adopt a Material Deprivation Index as a complementary indicator with which to monitor progress on poverty reduction.

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